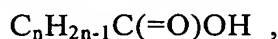


## Claims

1. A method for preparing metal salts of unsaturated, short-chain carboxylic acids by reaction

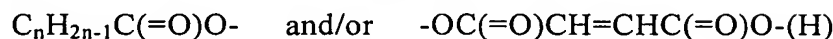
- of metal-alcoholate compounds  
- with carboxylic acids of the general formula



wherein the double bond is in 2- or 3-position and

**n** represents 2, 3, 4, 5, or 6 and/or maleic acid and

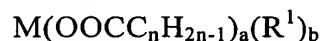
the metal salts have at least one group of the formula



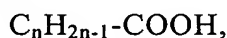
and the following metals or mixtures thereof

Mg, Ca, Al, Si, Sn, La, Ti, Zr, Cu and/or Zn.

2. The method of claim 1, characterized in that the metal salts have the general formula



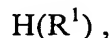
and can be obtained by reaction of a linear or branched, unsaturated carboxylic acid of the formula



wherein **n** represents 2, 3, 4, 5, or 6 with the double bond in 2- or 3-position, preferably in 2-position, with a metal compound of the general formula



and, optionally,



wherein

**a** is at least 1,

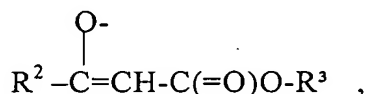
**b** is 0, 1, 2 or 3 and

**(a+b)** and **c** are independently of one another an integer of 2 to 4,

**M** is Mg, Ca, Al, Si, Sn, La, Ti, Zr, Cu, or Zn,

**R<sup>1</sup>** represents an alcoholate group having a C<sub>1</sub> - to C<sub>6</sub> hydrocarbons residue, wherein **R<sup>1</sup>** is a saturated, linear or branched alcoholate group, which can be obtained from an alcohol having at least one -OH group, wherein the -OH groups are preferably primary and/or secondary -OH groups,

or



wherein **R<sup>2</sup>** and respectively **R<sup>3</sup>** represent -CH<sub>3</sub>, -C<sub>2</sub>H<sub>5</sub>, -C<sub>3</sub>H<sub>7</sub> or -C<sub>4</sub>H<sub>9</sub>

and **n**, **R<sup>1</sup>**, **R<sup>2</sup>**, and **R<sup>3</sup>** may be different for each **a**, **b**, and **c** and at least one **R<sup>1</sup>** in **M(R<sup>1</sup>)<sub>c</sub>** represents an alcoholate group having a C<sub>1</sub> - to C<sub>6</sub> hydrocarbons residue, preferably in the presence of oxygen (O<sub>2</sub>).

3. A method according to any one of the preceding claims, characterized in that the reaction is carried out in the presence of oxygen, particularly continuously fed oxygen, preferably a gas mixture containing oxygen in a concentration from 5 to 30, preferably 15 to 25 vol%.
4. A method according to any one of the preceding claims, characterized in that the reaction is carried out at temperatures from 0 to 150 °C, preferably 20 to 100 °C.
5. A method according to any one of the preceding claims, characterized in that the reaction is carried out at pressures from 2 bar<sub>abs</sub> to 0.01 bar<sub>abs</sub>.
6. A method according to any one of the preceding claims, characterized in that the reaction is carried out without a solvent.
7. A method according to any one of claims 1 through 5, characterized in that the reaction is carried out in at least one of the following solvents: hydrocarbons, esters, ethers, glycols, and glycol mono- or diethers.
8. A method according to any one of the preceding claims, characterized in that the carboxylic acid is acrylic acid or methacrylic acid.
9. A method according to any one of the preceding claims, characterized in that the metal **M** is aluminium, titanium and/or zirconium, preferably aluminium.

10. A method according to any one of the preceding claims,  
characterized in that the metal compound is a metal alcoholate.
- 5 11. A method according to any one of the preceding claims,  
characterized in that the reaction is carried out in the absence of water  
(less than 100 ppm).
- 10 12. The use of metal salts having at least one unsaturated carboxyl group with 3  
to 7 carbon atoms in the carboxyl group or the reaction products thereof as or  
in coatings, particularly as an additive for improving hardness and/or  
adhesion of a coating, and in rubbers.
- 15 13. The use of metal salts according to claim 12 as coating materials or in coating  
materials for leather, glass, ceramics, paper, cardboard, plastics, metals, and  
textiles.
- 20 14. The use of metal salts having at least one unsaturated carboxyl group with 3  
to 7 carbon atoms in the carboxyl group as a monomer, particularly a co-  
monomer in polymerizations, especially radical and/or photoinitiated poly-  
merizations.
- 25 15. The use of metal salts having at least one unsaturated carboxyl group with 3  
to 7 carbon atoms in the carboxyl group as an additive in radiation-curing  
adhesives- or plastics compositions, particularly UV-curing ones, each of  
which furthermore containing particularly photoinitiators, particularly UV  
initiators.
- 30 16. The use of metal salts having at least one unsaturated carboxyl group with 3  
to 7 carbon atoms in the carboxyl group in printing-ink compositions,  
particularly as a radiation-curing monomer.
- 35 17. The use of metal salts having at least one unsaturated carboxyl group with 3  
to 7 carbon atoms in the carboxyl group or the reaction products thereof as a  
rheology modifier, particularly in printing-ink resins.
18. The use of metal salts having at least one unsaturated carboxyl group with 3  
to 7 carbon atoms in the carboxyl group or the reaction products thereof as a  
fungicide, bactericide and/or virucide in coatings.

- 5           19. The use of metal salts having at least one unsaturated carboxyl group with 3 to 7 carbon atoms in the carboxyl group or the reaction products thereof as or in barrier coatings for foils and sheets preventing permeation of oxygen and/or water.
- 10           20. The use of the metal salts according to at least one of claims 12 to 19, characterized in that same are prepareable according to the method of any one of claims 1 to 11.
- 15           21. The use of the metal salts according to at least one of claims 12 to 19, characterized in that the employed compositions containing said metal salts additionally contain
- 1 to 5 wt.% photoinitiators, particularly aromatic ketones, optionally alkylated and/or alkoxyated ones, preferably with C<sub>1</sub>- to C<sub>4</sub> alkyl- and/or alkoxyate groups, and/or
  - 0.05 to 2 wt.% UV- and/or radical stabilizers, particularly alkylated and/or alkoxyated hydroxy aromatics, preferably phenols and independently thereof having C<sub>1</sub>- to C<sub>4</sub> alkyl- and/or alkoxyate groups.
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